

Geological Mapping, Compilation and Mineral Evaluation of the Almond Mountain Map Area, Southern British Columbia (NTS 082E/07)

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Project Summary

The Almond Mountain project includes geological mapping and compilation of a large part of the 1:50 000 scale Almond Mountain map area (NTS 082E/07), located in the Monashee Mountains of southern British Columbia. The project is an extension to the west of mapping, compilation and mineral-potential evaluation of the east half of the 1:250 000 scale Penticton map area (NTS 082E), which included the Grand Forks (NTS 082E/01), Deer Park (NTS 082E/08) and Burrell Creek (NTS 082E/09) map areas (Höy and Jackaman, 2005, 2010, 2013; Figure 1). These projects focused mainly on the potential and controls of Tertiary¹ mineralization along the northern margin of the Grand Forks gneiss complex (Preto, 1970), and recognized and defined a variety of base-metal and precious-metal mineral deposits that appear to be related to prominent north- and northwest-trending regional structures. Geological mapping in the Burrell Creek and Deer Park map areas recognized that metallic mineral deposits, including the Franklin mining camp, are controlled by two prominent structural trends: north-trending Eocene extensional faults and earlier northwest-trending structural zones (Höy, 2013). Furthermore, it was recognized that most deposits occur in the hangingwall of the north-trending faults due, in part, to a genetic relationship to these faults but also to the realization that hangingwall panels expose higher intrusive and structural levels, both of which are more favourable settings for mineralization.

The Almond Mountain project, and the continuation to the north in the Christian Valley map area (NTS 082E/10) in

2016, will extend this work into an area that has attracted some historical and recent exploration, mainly due to successful gold and base-metal exploration in the Greenwood area immediately to the south (Church, 1986; Fyles, 1990; Massey et al., 2010) and farther south in the Republic District of Washington State. However, there has been little university- or government-led exploration research since a regional (1:250 000 scale) mapping and compilation done in the 1980s (Tempelman-Kluit, 1989), with some work focused on Paleozoic successions in the western part of the area by Massey (2006, 2009) and Massey and Duffy (2008).

The Almond Mountain project will include approximately 40 days of geological mapping, which will concentrate on areas of mineral occurrences and higher mineral potential, as well as the evaluation and upgrading of the mineral-occurrence database (BC MINFILE). Geological mapping began late in 2014 and will be completed during the 2015 field season. The project will also include compilation in digital format of all regional geological, geophysical and geochemical data collected under the National Geochemical Reconnaissance (NGR) Program and the BC Regional Geochemical (RGS) Program. This will be combined with mineral occurrence and geology databases to produce several 1:20 000 and 1:50 000 scale maps suitable for directing and focusing mineral exploration. Data, including integrated geological maps, poster displays and *Geoscience BC Summary of Activities* papers, will be released on completion of the Almond Mountain project in the winter of 2015–2016, and for the Christian Valley map area the following year.

The project is intended to integrate all geological data in the east half of the 1:250 000 scale Penticton map area (NTS 082E), including NGR/RGS data and regional geophysical studies. These data, combined with mineral occurrence databases, will provide models that will help both direct and understand the relationship between mineralizing systems and Tertiary extension and magmatism. It is hoped that new mapping and data will spur grassroots prospecting and help focus exploration activity in an area of southern British Columbia that, due partly to limited access in the past, lack of recent government or university input and poorly understood geology, is historically underexplored.

¹*Tertiary* is an historical term. The International Commission on Stratigraphy recommends using 'Paleogene' (comprising the Paleocene to Oligocene epochs) and 'Neogene' (comprising the Miocene and Pliocene epochs). The author used the term 'Tertiary' because it was used in the source material for this report.

Keywords: geology, regional compilation, Eocene Coryell alkalic intrusions, Jurassic-Cretaceous intrusions, Eocene extensional tectonics

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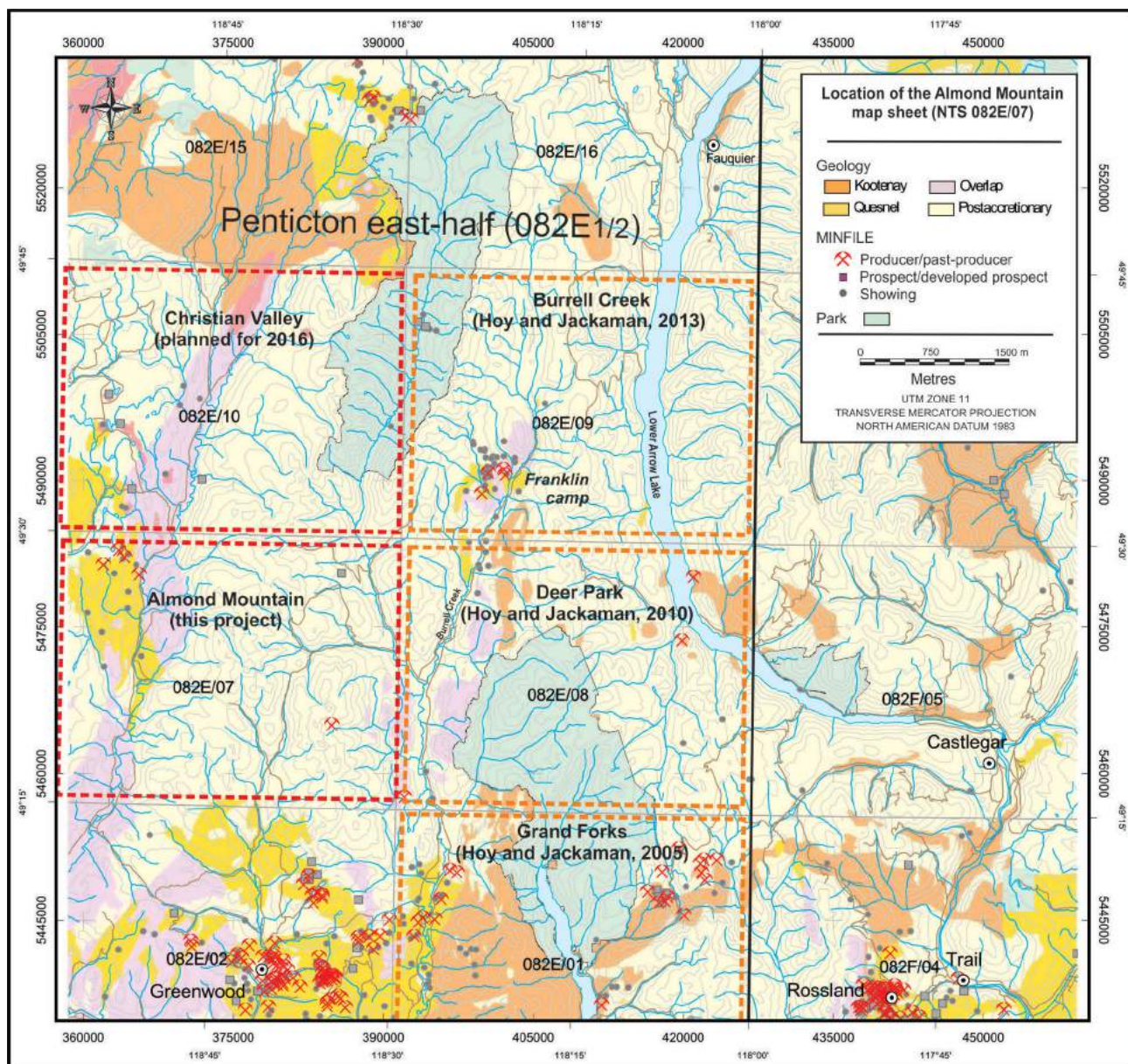


Figure 1. Location of the Almond Mountain map sheet (NTS 082E/07), southern British Columbia.

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